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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/909,195	07/19/2001	Kouichi Saitou	35061-02500	9740

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Milbank, Tweed, Hadley & McCloy LLP
1 Chase Manhattan Plaza
New York, NY 10005-1413

EXAMINER

MACCHIAROLO, PETER J

ART UNIT PAPER NUMBER

2875

DATE MAILED: 12/31/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/909,195

Applicant(s)

SAITOU ET AL.

Examiner

Peter J Macchiarolo

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AW

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 12 September 2003.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-13 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-13 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 9.
- 4) ☐ Interview Summary (PTO-413) Paper No(s). _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other:

DETAILED ACTION

Information Disclosure Statement

1. The information disclosure statement (IDS) submitted on September 12, 2003 is in compliance with the provisions of 37 CFR 1.97. Accordingly, the information disclosure statement is being considered by the examiner.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. Claims 1-8, and 10-13 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hidaka et al (USPN 6,404,119; "Hidaka") in view of Hart (USPN 3,840,773; "Hart")
3. In regards to claims 1 and 8, Hidaka discloses in figures 1 and 2, a projection tube that requires a reduced amount of deflection power, comprising a panel (3) which forms a phosphor screen (3a) on an inner surface thereof, a funnel (7), a neck portion (8) and a stem portion (not labeled) which seals the neck portion, wherein the neck portion includes a first neck portion (8a) which constitutes a portion connected to the funnel portion and has a first outer diameter of the neck portion ($\emptyset a$), and a second neck portion (8b), which constitutes a portion which accommodates an electron gun (10) and has a second outer diameter of the neck portion ($\emptyset b$), the first outer diameter of the neck portion is set smaller than the second outer diameter of the neck portion, the entire electron gun is in the second neck portion, and a deflection yoke (11b)

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which deflects the electron beam is mounted on the first neck portion having the first neck outer diameter, and a maximum operating voltage of the electron gun is set to equal to or more than 25kv, and that the first outer diameter of the neck portion is set to equal or less than 29.1 mm¹.

4. Hidaka is silent to the specifics of the electron gun.

5. However, an electron gun that has a focus electrode and an anode electrode that emits a single electron beam to the phosphor screen is a known configuration in the art, as evidenced by Hart. Further, one would be motivated to use Hart's electron gun configuration, since Hart teaches this gun doesn't require a high powered amplifier while still having acceptable image delay times².

6. Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to construct Hidaka's projection tube using Hart's electron gun, since this configuration allows for Hidaka's reduced amount of deflection power and Hart's reduces powered amplifier while still having acceptable delay times.

7. In regards to claims 2 and 3, Hidaka and Hart teach all of the recited limitations of claim 1 (above).

8. Although Hidaka and Hart are both silent to the maximum operating voltage of an electron gun being set to equal to or more than 30 kV, and a maximum cathode current being set to equal to or more than 4 mA is a well known configuration in the art. Further, the Examiner notes that discovering an optimum value of a result effective variable involves only routine skill in the art. *In re Boesch*, 617 F.2d 272, 205 USPQ 215 (CCPA 1980).

¹ Hidaka, col. 1, ll. 66 to col. 2, line 2; and col. 8, ll. 50-55.

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9. Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to construct Hidaka's projection tube using Hart's electron gun and Applicant's recited maximum voltage and amperes, since this is a well known configuration in the art, and one of routine skill would discover the optimum values.

10. In regards to claims 5-7, and 11-13, Hidaka and Hart teach all of the recited limitations of claims 1 and 8 (above).

11. Hidaka and Hart are both silent to the second outer diameter of the neck portion is set to 36.5mm or more, or that the pins for supplying voltages to electrodes of the electron gun have a specific diameter of 15.12mm.

12. However, Hidaka does teach that typically, the second outer diameter of the neck portion is set to equal 29.1mm^3 and a pin diameter of 15.24 is well known in the art. One of ordinary skill in the art would arrive at the second outer diameter being set to 36.5mm or more, and the pins have a diameter of 15.12mm, since such modifications would have involved a mere change in the size of a component. A change in size is generally recognized as being within the level of ordinary skill in the art. *In re Rose*, 105 USPQ 237 (CCPA 1955).

13. Claim 9 is rejected under 35 U.S.C. 103(a) as being unpatentable over Hidaka in view of Hart, in further view of Konda et al. (USPN 6,133,685; "Konda").

14. In regards to claim 9, Hidaka and Hart teach all of the recited limitations of claim 8 (above).

² Hart, col. 1, ll. 15-25, ll. 63-68.

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15. Both Hidaka and Hart are silent to a convergence yoke mounted on the second neck portion having the second neck outer diameter.

16. However, Konda teaches in figure 1, that a convergence yoke (8) is positioned on the neck portion so as to pass through the anodic electrode 1, which is equivalent to Applicant's second neck portion, and this configuration prevents the efficiency of modulating electron beam trajectories from being deteriorated, and the heat generation at the anodic electrode 1a can be reduced⁴.

17. Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to construct the projection tube of Hidaka with the electron gun of Hart, including a convergence yoke mounted on the second neck portion having the second neck outer diameter, since this configuration prevents the efficiency of modulating electron beam trajectories from being deteriorated, and the heat generation at the anodic electrode can be reduced.

Conclusion

18. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

19. U.S. Patent 5,909,079 to Uchida et al. is evidence that setting an electron gun to have a maximum operating voltage set to or more than 30kV, and a maximum cathode current being set to or more than 4mA is well known in the art.

³ Hidaka, col. 7, ll. 15-20.

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20. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Peter J Macchiarolo whose telephone number is (703) 305-7198.

The examiner can normally be reached on 7.30 - 4:30, M-F.

21. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Sandra O'Shea can be reached on (703) 305-4939. The fax phone number for the organization where this application or proceeding is assigned is (703) 872-9306.

22. Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-0956.

pjm



THOMAS M. SEMPER
PRIMARY EXAMINER

⁴ Konda, col. 4, ll. 26-35